

Serial No. 09/977,085

Page 2 of 17

IN THE SPECIFICATION:

Please replace paragraph [0009] with the following amended paragraph:

[0009] In order to personalize the electronic environment, the electronic communication device forwards the user's unique identifying information to the digital identity server via the Internet. The nature and capabilities of the given remote electronic communication device is also forwarded to the digital identity server. The digital identity server responds by transmitting a digital identity corresponding to the user of the given electronic communication device. The received digital identity defines the services for which the user is authorized (e.g. in the case of a CATV subscriber, the received digital identity includes a list of the premium channels that the subscriber is authorized to view). Furthermore, the digital identity server provides a level of functionality suited to the capabilities of the particular electronic communication device. The electronic communication device receives the digital identity of the user and personalizes its operation to suit the user.

Please replace paragraph [0010] with the following amended paragraph:

[0010] The electronic communication device that retrieves the digital identity of the user and personalizes its operation to suit the user may be a CATV settop box, a cellular telephone, a computer, a video game console, an Internet access terminal, a payphone, a vending machine or any present or future electronic communication device. In such manner, the digital identity of the user is made portable, and follows the user wherever the user may go, providing the user with the same electronic environment that is accessible from any electronic communication device.

Please replace paragraph [0011] with the following amended paragraph:

[0011] In addition, the portable digital identity system of the present invention facilitates the use of simplified electronic communication devices. In particular, electronic

415286-1

Serial No. 09/977,085

Page 3 of 17

communication devices for accessing the user's portable digital identity may be implemented using very thin client software with or~~and/or~~ without persistent data storage, making the electronic communication device smaller, lighter and less expensive.

Please replace paragraph [0012] with the following amended paragraph:

[0012] The portable digital identity includes email preferences, an email address book and email client software settings, thereby presenting to the user a seamless and consistent email environment. The portable digital identity includes TV preferences, permitting the user to watch his favorite shows and have his premium channels be available from any hotel room. The portable digital identity includes preferred credit card and shipping information (work and home addresses), as well as preferred carriers and other preferences to facilitate eCommerce applications.

Please replace paragraph [0014] with the following amended paragraph:

[0014] The portable digital identity of the present invention includes demographic profiles and marketing data on the user's activities and preferences across devices and in real time. In such manner, for example, an online newspaper viewed at a remote location, contains articles of interest to the subscriber and presents demographically targeted advertising tailored to the interests of the subscriber.

Please replace paragraph [0015] with the following amended paragraph:

[0015] The portable identity of the present invention may be used to control TV appliances. For example, if a user normally records a given television show on a weekly basis, that knowledge can be used to construct a profile of the user that is then mapped to the user's portable digital identity and stored. The profile may then be used by other applications to target application content at the user to~~the~~ suits his or her interests.

415286-1

Serial No. 09/977,085

Page 4 of 17

Please replace paragraph [0020] with the following amended paragraph:

[0020] FIG. 2C is a block diagram further detailing the implementation of another~~an~~ ~~ether~~ network adapter for use with a portable digital identity server in accordance with the present invention.

Please replace paragraph [0024] with the following amended paragraph:

[0024] FIG. 6 is a block diagram of a machine data object for~~to~~ representing in interactive device for use in accordance with the present invention.

Please replace paragraph [0034] with the following amended paragraph:

[0034] The digital identity server 100 retrieves configuration information from the command server 120 about various types or classes of devices within the system, and applies the configuration information as a filter when returning the digital identity data back to the user device. The set of applications and the generic user properties as well as application specific user properties are tailored to take into account the processing power, network bandwidth and memory footprint capabilities of the communications device currently in use by the user. Thus, when the user is on a powerful communications device, such as a personal computer 110, the list of applications available to such user includes the full set of allowed or subscribed applications. When the user is on a less powerful device such as a set-top box 102 or a personal digital assistant 108, the list of applications available to a user will typically include only a lesser permissible subset of applications.

Please replace paragraph [0043] with the following amended paragraph:

[0043] The digital identity engine 22 is the component that handles ~~all~~ access to all of the data that adapters 10, 10A, 12, 12A (and thus clients) ~~is~~ stored on the server side.

415286-1

Serial No. 09/977,085

Page 5 of 17

The core engine 22 and its digital identity APIs 20 are written in Java to take advantage of Java Database Connectivity (JDBC) as the primary mechanism for accessing the digital identity data.

Please replace paragraph [0047] with the following amended paragraph:

[0047] The digital identity engine 230 is what implements the API that adapters 222, 224, 226 use to perform operations on data. Adapters are software components that communicate with clients. Various adapters are developed for the various clients that digital identity server 210 supports. For example, standard adapters include a CORBA adapter, a digital television and cookie adapter 224 and an XML adapter 226. An Additional~~either~~ adapters 212 may be created using the software development kit 214.

Please replace paragraph [0048] with the following amended paragraph:

[0048] Various client software 202, 203, 204, 206 and 208 communicates with the digital identity server 210 via a corresponding adapter. For example, a provisioning application 202 and a digital identity control console 203 interface through a CORBA adapter 222. A first generation digital television client 204 (using a proprietary protocol) interfaces through a digital television and cookie adapter 224. A next generation digital television client communicates with the digital identity server 210 through an XML adapter 226 (using a standard version of Extensible Markup language or XML) as would the additional~~an other~~ adapter 212. CORBA Clients use their own protocol, notably CORBA IIOP in COBRA adapter 222, rather than XML/HTTP in adapter 226.

Please replace paragraphs [0052]-[0056] with the following amended paragraph:

[0052] A data access layer 254 in the digital identity engine 230 provides the following functionality: ~~[0053] (1)- p~~ools connections 253 to all data sources, including Group databases 272B, System database 272A, and Lightweight Directory Access protocol (LDAP) server(s) 268; ~~[0054] (2)- d~~ynamically updates and management of the

415286-1

Serial No. 09/977,085

Page 6 of 17

relational database schema; ~~[0055] (3) Use of the schema mapper 256 and system data cache 262 to implement its operations and abstract from the API implementation 252 how data is accessed and where it is stored, hiding the fact that the data is distributed; and [0056] (4) Provide the implicit mapping from the schema of the objects defined in XML to the database schema.~~

Please replace paragraph [0057] with the following amended paragraph:

[0057] The Supported Objects are given in the table below. These objects are the same as the objects defined in the XML Protocol and as used in the digital identity server.

Please replace paragraph [0057] with the following amended paragraph:

[0073] The API implementation 252 calls only the various parts of the data access layer 254 to perform the functions it needs; it does not call any other pieces, nor does it access any database (268, 270, 272A, 272B) directly. The data access 254 layer maps each specific digital identity API 251 call into the (more general) data access call. For example, a CreateEntity API function calls the generic "create" or "set" method in the data access layer 254, after setting up all the right parameters, and the connection. Similarly, a GetCookies or GetProperties API function, calls a generic "get" method, after setting up all the parameters for each type of object (see object list above) to get the data from the database.

Please replace paragraph [0113] with the following amended paragraph:

[0113] The CORBA adapter is needed to support the User Data Manager, which is a CORBA Client (which may be currently implemented as a Java applet). Like all CORBA servers, it supports an interface defined in an IDL. IDL has currently been defined for the digital identity engine consisting of about 40 operations, defined on 7 interfaces (object classes). This supports a particular object model, which may be ~~has since been~~ extended for digital identity. In order to make the new digital identity features accessible

415286-1

Serial No. 09/977,085

Page 7 of 17

through CORBA, the IDL is extended. The adapter translates IDL calls into digital identity API calls.

Please replace paragraph [0117] with the following amended paragraph:

[0117] All Entities may have primitive Properties. Properties are typed; the current set of types is {string; integer; boolean; binary}. Besides the primitive Properties, Entities may have Collection Properties associated with them. Collections are structured objects-- i.e., they have primitive Properties of their own. Collections may have many Instances for a given Entity; each Instance has a unique InstanceID ~~instanceid~~, which can be used to access that Instance.

Please replace paragraphs [0123]-[0126] with the following amended paragraph:

[0123] The primary objects in the system are Entities 802, which correspond to Accounts 806, Machines 808, and Users 810. There are three subclasses of Entities to represent the three cases listed above: ~~[0124] Accounts~~ Entities; ~~r~~Represents a billing account. ~~An Account~~ may have multiple Machine and multiple User entities associated with it. ~~[0125] Machine~~ Entities; ~~r~~Represents a single set-top box. Each Machine object must always have an associated Account. ~~[0126] User~~ Entities; ~~r~~Represents a User on a set-top box. Each User object must always have an associated Account.

Please replace paragraphs [0131]-[0135] with the following amended paragraph:

[0131] Digital identity adapters 908, 910 communicate with the digital identity servers 902, 904 across an API 912 that provides a single point of access to all data in all digital identity servers. This provides the following benefits: ~~[0132] Different TV Navigator clients (such as TV Navigator Standard and Compact clients) can all access the same digital identity server or server groups. [0133] Developers can create custom provisioning applications that use the services of the digital identity CORBA adapter. These applications can also interface to external billing, customer service, and~~

415286-1

Serial No. 09/977,085

Page 8 of 17

subscriber management systems, to interoperate with legacy systems. [0134] A simple graphical user interface is provided at the digital identity console 914, which can access and modify persistent data stored in the digital identity servers. The digital identity console 914 is implemented as a CORBA client. [0135] Through the provisioning plugin architecture, digital identity provides access to external back-end data stores, such as LDAP servers enabling system operators to access legacy data.